

**K. J. Somaiya Institute of Engineering and Information Technology  
Sion, Mumbai - 400022**

**NAAC Accredited Institute with 'A' Grade**

**NBA Accredited 3 Programs (Computer Engineering, Electronics & Telecommunication Engineering and Electronics Engineering) Permanently Affiliated to University of Mumbai**

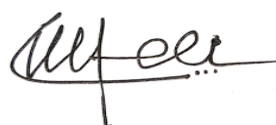
**EXAMINATION TIME TABLE (JUNE 2021)**

**PROGRAMME - B.E. (Information Technology) (REV-2012)(CBSGS)**

**SEMESTER - VII**

<b>Days and Dates</b>	<b>Time</b>	<b>Course Code</b>	<b>Paper</b>
Tuesday, June 15, 2021	03:30 p.m. to 05:30 p.m.	ITC701	Software Project Management
Thursday, June 17, 2021	03:30 p.m. to 05:30 p.m.	ITC702	Cloud Computing
Saturday, June 19, 2021	03:30 p.m. to 05:30 p.m.	ITC703	Intelligent System
Tuesday, June 22, 2021	03:30 p.m. to 05:30 p.m.	ITC704	Wireless Technology
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ITC7051	Elective I : 1) Image Processing
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ITC7052	2) Software Architecture
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ITC7053	3) E-Commerce & E- Business
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ITC7054	4) Multimedia Systems
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ITC7055	5) Usability Engineering
Thursday, June 24, 2021	03:30 p.m. to 05:30 p.m.	ITC7056	6) Ubiquitous Computing

**Important Note:** • Change if any, in the time table shall be communicated on the college web site.



**Mumbai  
20th May, 2021**

**Principal**

**University of Mumbai**  
**Examination 2021 under cluster 7 (Lead College: SSJCOE)**

Program: **Information Technology**  
Curriculum Scheme: Rev-2012

Examination: BE  
Course Code: ITC701  
Time: 2 hour

Semester VII  
Course Name: Software Project Management  
Max. Marks: 80

<b>Q1.</b>	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	Which one is not applicable for successful factors for project execution?
Option A:	User involvement
Option B:	Executive management support
Option C:	Lack of user input
Option D:	Clear vision and objective
2.	The newly added project management knowledge area is
Option A:	Time management
Option B:	Quality management
Option C:	Quantity Management
Option D:	Stakeholder management
3.	Payback period is
Option A:	Total Investment/Net cash flow
Option B:	Partial Investment/Net cash flow
Option C:	Total Investment/Cash flow
Option D:	Total budget/Total investment
4.	In which phase, Project charter is delivered?
Option A:	Define
Option B:	Planning
Option C:	Closure
Option D:	Execution
5.	What is expected as the output of scope control process except
Option A:	Change Requests
Option B:	Project document updates
Option C:	Scope changes
Option D:	Work performance measurements
6.	The project management activity which deals with examining the entire project process, methodologies used, budgets and the completion is term as:
Option A:	Project Outsourcing
Option B:	Project budgeting

Option C:	Project Audit
Option D:	Project Contracting
7.	CCPM stands for
Option A:	Critical chain project management
Option B:	Critical chain product management
Option C:	Critical Path Method
Option D:	Critical chain project mechanism
8.	There are 4 activities A,B,C & D with activity time 4, 5,6 & 7 days respectively . Activities B & C has predecessor A. D has predecessor B &C. find the critical path.
Option A:	ABD
Option B:	AB
Option C:	ACD
Option D:	ABCD
9.	An inter-task dependency in which two tasks must finish at the same time is called :
Option A:	Start-to-finish (FS)
Option B:	Finish-to-start (FS)
Option C:	Finish-to-finish (FF)
Option D:	Start-to-start (SS)
10.	Subcontractors, consultants, travel, telephone, computer time, material costs, purchased parts, freight constitute to
Option A:	Direct labor expense
Option B:	Direct nonlabor expense
Option C:	Overhead expense
Option D:	General and administrative expense
11.	Using the LCC model a sensitivity analysis can be performed to show 1) best-case scenarios 2) most-likely scenarios 3) worst-case scenarios
Option A:	Only 1 is correct
Option B:	Only 1 and 3 are correct
Option C:	Only 1 and 2 are correct
Option D:	All 1,2 and 3 are correct
12.	Project team quality implies that each person: 1) Is able and willing to meet those expectations 2) Knows the extent to which he/she meets the expectations 3) Knows Life cycle cost of the project.
Option A:	Only option, a is correct
Option B:	Options, a and c are correct
Option C:	Optios, a and b are correct
Option D:	All options a, b and c are correct
13.	Which of the following is a ground rule for project team building?
Option A:	Perform frequent performance appraisals
Option B:	Ensure that each team member reports to his or her functional manager in addition to the project manager
Option C:	Start early

Option D:	Try to solve team political problems
14.	Major difficulties arise when multiple projects need to be managed in the functional organizational structure because of
Option A:	The level of authority of the project manager
Option B:	Conflicts over the relative priorities of different projects in competition for limited resources
Option C:	Project team members who are focused on their functional specialty rather than on the project
Option D:	The need for the project manager to use interpersonal skills to resolve conflicts informally
15.	Which one of the following means that the communication occurs?
Option A:	The transmission of knowledge
Option B:	The outputting of knowledge
Option C:	The presence of knowledge
Option D:	The transfer of knowledge
16.	What is earned value analysis?
Option A:	Technique for analyzing cost and schedule together
Option B:	Form of trend analysis
Option C:	form of status reporting.
Option D:	A method of information distribution.
17.	The basic approaches to analyzing and assessing project risk are
Option A:	Qualitative and Quantitative analysis
Option B:	Project and product analysis
Option C:	Process and product analysis
Option D:	Process and prototype analysis
18.	Project risk management provides warning
Option A:	Before implementation
Option B:	After implementation
Option C:	Before and after implementation
Option D:	which is randomly generated either before or after implementation
19.	Which is not phase of Project Procurements ?
Option A:	Selection
Option B:	Specification
Option C:	Contracting
Option D:	Designing
20.	Performed when a project is canceled or ends prematurely. It describes the reasons for cancellation or failure and documents the deliverables that were completed.
Option A:	Starvation
Option B:	Close procurements
Option C:	post-mortem analysis
Option D:	post-project review

<b>Q2 . (20 Marks Each)</b>	<b>Solve any Four out of Six</b>	<b>5 marks each</b>
A	What is project infrastructure?	
B	Why do we need a project charter ?	
C	Why must a project's scope be tied to the WBS?	
D	Differentiate CPM and PERT.	
E	What are the advantages of including milestones in the WBS with respect to time management?	
F	List three main steps that you would like to bring in practice to effectively reduce/control the cost of your project.	

<b>Q3. (20 Marks Each)</b>	<b>Solve any Four out of Six</b>	<b>5 marks each</b>
A	Explain IT project quality plan.	
B	What is the role of PMIS in Project Management?	
C	Explain the three categories of communication.	
D	Explain the fishbone diagram.	
E	Describe procurement processes.	
F	What are the steps involved in terminating the project?	

**University of Mumbai**  
**Examination 2021 under cluster 7 (Lead College: SSJCOE)**

Program: **Information Technology**  
Curriculum Scheme: Rev-2012

Examination: BE  
Course Code: ITC701  
Time: 2 hour

Semester VII  
Course Name: Software Project Management  
Max. Marks: 80

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<b>Question Number</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	C
Q2.	D
Q3.	A
Q4	B
Q5	C
Q6	C
Q7	A
Q8.	C
Q9.	C
Q10.	B
Q11.	D
Q12.	C
Q13.	C
Q14.	B
Q15.	D
Q16.	A
Q17.	A
Q18.	A
Q19.	D
Q20.	C

**University of Mumbai**  
**Examination 2021 under cluster 7 (Lead College: SSJCOE)**

**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC702 and Course Name: Cloud Computing

Time: 2 hour

Max. Marks: 80

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<b>Q1.</b>	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	What is the full form of Eucalyptus
Option A:	Elastic utility computing architecture for linking your program to useful system
Option B:	Elastic usability computing architecture for loading your program to useful system
Option C:	Enable utility computing architecture for linking useless program to useful system
Option D:	Efficient utility calculated architecture for linking your program to useful system
2.	The nodes types of eucalyptus are
Option A:	Additive and subtractive
Option B:	Static and dynamic
Option C:	High level and low level
Option D:	Managed, system and static
3.	Utility computing gives
Option A:	Provisioning for urgent work with incentive for users
Option B:	All cloud services
Option C:	All network services
Option D:	Client server combination
4.	Cloud computing components are
Option A:	Different types of clients

Option B:	Grid and utility computing components
Option C:	Client, server, data center and internet
Option D:	All networking devices
5.	Private cloud .....
Option A:	Its size is always larger then the public cloud
Option B:	Has its infrastructure inhouse
Option C:	Is accessible to all the users
Option D:	All its services are on the cloud
6.	What types of issue is caused by creation of multiple copies of data during date transformation
Option A:	Runtime issue
Option B:	Redundancy issue
Option C:	Implementation issue
Option D:	deployment issue
7.	Which of the following port numbers is used to share files and printers on a windows machine
Option A:	50
Option B:	21
Option C:	139
Option D:	23
8.	Which one of the following is not a feature of Cloud Storage Gateways
Option A:	Caching algorithm
Option B:	Data replication process
Option C:	Synchronous snapshots
Option D:	Routing



9.	Which of the following layers comprises cloud servers , storage , load balancers and security devices?
Option A:	Transport layer
Option B:	Compute layer
Option C:	Network layer
Option D:	User Access layer
10.	Which one of the following is a technique used to improve cloud database performance
Option A:	Normalization
Option B:	BCNF
Option C:	Sharding
Option D:	RBAC
11.	Which is not cloud host and data security product available
Option A:	Secure Cloud
Option B:	Deep security
Option C:	OSSEC
Option D:	Internet Explorer
12.	SaaS providers manage and secure all the following except:
Option A:	Infrastructure
Option B:	OS
Option C:	Application Stack
Option D:	Access Controls
13.	In which environment do admins have the most control over cloud app security?
Option A:	PaaS
Option B:	SaaS
Option C:	IaaS
Option D:	CaaS

14.	Simple Cloud, jclouds and Libcloud are all examples of:
Option A:	Vendor-specific cloud APIs
Option B:	Cross-platform APIs
Option C:	IaaS APIs
Option D:	Apache APIs
15.	In which of the following phases requires review of various internal and cloud provider features?
Option A:	Assessment
Option B:	PoC
Option C:	Pilot Migration
Option D:	Testing
16.	Which of the following tool collect and store data, based on the identified atomic units for each type of billable item?
Option A:	Data collection tools
Option B:	Arbitration tool
Option C:	Billing system
Option D:	Capacity analysis tool
17.	Validating a user's identity to permit or reject a login is called -----.
Option A:	Availability
Option B:	Authorization
Option C:	Accounting
Option D:	Authentication
18.	Which of the following protocol is used by AAA servers?
Option A:	TCP
Option B:	RADIUS
Option C:	IP
Option D:	FTP

19.	Which of the following techniques migrate to and host the old application on a PaaS provider's infrastructure?
Option A:	Application Re-hosting
Option B:	Application Re-factoring
Option C:	Application Revision and Optimization
Option D:	Application Re-architecture and re-building
20.	Which layer facilitates the clients to store servers and hardware components?
Option A:	Data center
Option B:	IaaS
Option C:	PaaS
Option D:	SaaS

<b>Q2.</b> <b>(20 Marks)</b>	<b>Solve any Two Questions out of Three</b>	<b>10 marks each</b>
A	Draw and explain the architecture of Eucalyptus.	
B	Explain the cloud computing service model with details.	
C	What is full virtualization, para virtualization & VMM? Explain in detail.	

<b>Q3.</b> <b>(20 Marks)</b>	<b>Solve any Two Questions out of Three</b>	<b>10 marks each</b>
A	Explain Cloud Service Brokerage (CSB) in detail.	
B	Write detailed Note on Amazon S3.	
C	Explain the architecture of Mobile Cloud Computing.	

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**University of Mumbai**  
**Examination June 2021**

**Examinations Commencing from 15th June 2021**

Program: **INFORMATION TECHNOLOGY**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC702 and Course Name: Cloud Computing

Time: 2 hour

Max. Marks: 80

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<b>Question Number</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	A
Q2.	D
Q3.	A
Q4	C
Q5	B
Q6	B
Q7	C
Q8.	D
Q9.	B
Q10.	C
Q11.	D
Q12.	D
Q13.	A
Q14.	B

Q15.	A
Q16.	A
Q17.	D
Q18.	B
Q19.	B
Q20.	B

**University of Mumbai**  
**Examination 2021 under cluster 7 (Lead College: SSJCOE)**

**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC703 and Course Name: Intelligent System

Time: 1 hour

Max. Marks: 80

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Thinking humanly is
Option A:	The laws of thought approach
Option B:	The Turing Test approach
Option C:	The cognitive modelling approach
Option D:	The rational agent approach
Q2.	Which of the following is FALSE?
Option A:	Reflex agents respond immediately to percepts
Option B:	Goal-based agents act so that they will achieve their goal(s)
Option C:	Utility-based agents try to maximize their own "happiness."
Option D:	Learning agent work on condition action rule
Q3.	Taxi driving agent is an example of _____ Environment
Option A:	Episodic
Option B:	Static
Option C:	Deterministic
Option D:	Fully observable
Q4.	What is the space complexity of Iterative deepening search?
Option A:	O(bl)
Option B:	O(bd)
Option C:	O(bm)
Option D:	O(bb)
Q5.	Where does the values of alpha-beta search get updated?
Option A:	Along the path of the search
Option B:	At the beginning of the search
Option C:	At the end of the search
Option D:	At the mid of the search
Q6.	In SELECT-UNASSIGNED-VARIABLE method which of the following is used as a tie breaker for MRV(Minimum Remaining Values) heuristic?
Option A:	Least Constraining Value
Option B:	Degree heuristic
Option C:	Arc consistency
Option D:	Backtracking

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**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Q7.	Which search uses the problem specific knowledge beyond the definition of the problem?
Option A:	Informed search
Option B:	Depth-first search
Option C:	Breadth-first search
Option D:	Uninformed search
Q8.	Which search uses only the linear space for searching?
Option A:	Best-first search
Option B:	Recursive best-first search
Option C:	Depth-first search
Option D:	Breadth-first search
Q9.	What is the other name of informed search strategy?
Option A:	Linear search
Option B:	Heuristic search
Option C:	Online search
Option D:	Breadth-first search
Q10.	Which function will select the lowest expansion node at first for evaluation?
Option A:	Greedy best-first search
Option B:	Best-first search
Option C:	Depth-first search
Option D:	None of the mentioned
Q11.	To eliminate the inaccuracy problem in planning problem or partial order planning problem we can use _____ data structure/s.
Option A:	Stacks
Option B:	Queue
Option C:	BST (Binary Search Tree)
Option D:	Planning Graphs
Q12.	What are the two major aspects which combines AI Planning problem?
Option A:	Search & Logic
Option B:	Logic & Knowledge Based Systems
Option C:	FOL & Logic
Option D:	Knowledge Based Systems
Q13.	Forward chaining systems are _____ whereas backward chaining systems are _____
Option A:	Goal-driven, goal-driven
Option B:	Goal-driven, data-driven

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Curriculum Scheme: Rev2012

Examination: BE Semester VII

Option C:	Data-driven, goal-driven
Option D:	Data-driven, data-driven
Q14.	Which of the following is a Planning approach where the actions in the plan can occur without the rule that specific action has to come prior?
Option A:	Partial Order Planning
Option B:	Total Order Planning
Option C:	Planning task
Option D:	None of the given choices
Q15.	_____ search belongs to totally ordered plan search
Option A:	Forward state-space search
Option B:	Hill-climbing
Option C:	Best first search
Option D:	Depth-first search
Q16.	In probability theory, the set of all sample worlds is called?
Option A:	Sample Space
Option B:	Sample Worlds
Option C:	Sample Distribution
Option D:	Sample Certainty Space
Q17.	..... not the commonly used programming language for AI?
Option A:	PROLOG
Option B:	Perl
Option C:	Java
Option D:	LISP
Q18.	The DECISION-TREE-LEARNING algorithm adopts:
Option A:	Divide and conquer strategy
Option B:	Dynamic programming
Option C:	Greedy Algorithm
Option D:	Brute force
Q19.	What is Machine learning?
Option A:	The autonomous acquisition of knowledge through the use of manual programs
Option B:	The selective acquisition of knowledge through the use of computer programs
Option C:	The autonomous acquisition of knowledge through the use of computer programs
Option D:	The selective acquisition of knowledge through the use of manual programs
Q20.	In which of the following methods, an expert is asked to verbalize his thought process while solving a problem or making a decision?



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 Examination: BE Semester VII

Option A:	Protocol analysis
Option B:	Repertory Grid Analysis
Option C:	Knowledge discovery
Option D:	Observations

Q2	A	Answer Any Two	Marks
	I	Compare the rational agent approach with the Turing Test approach.	05
	II	"THIS + IS = HERE" Solve this Cryptarithmic Puzzle.	05
	III	Briefly describe the breadth-first and the depth-first search for trees.	05
	B	Answer Any One	
	I	Explain working of Utility and Learning Agent	10
	II	Find the solution using Min-Max and Alpha Beta Pruning	10
Q3	A	Answer Any Two	Marks
	I	Explain the architecture of a knowledge based agent.	05
	II	Explain Conditional Probability.	05

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Curriculum Scheme: Rev2012

Examination: BE Semester VII

III	Explain Decision Trees	05
B	Answer Any One	
I	What is partial ordered planning? Give example.	10
II	What is Bay's theorem and Belief Network?	10

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**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC703 and Course Name: Intelligent System

Time: 1 hour

Max. Marks: 80

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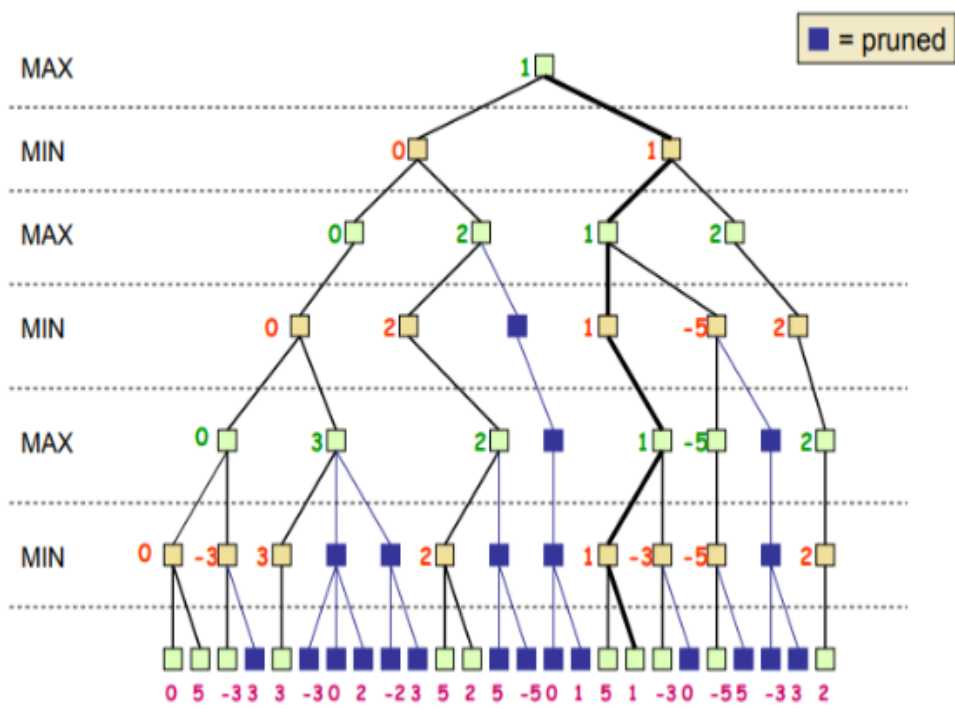
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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	C
Q2.	D
Q3.	A
Q4	B
Q5	A
Q6	B
Q7	A
Q8.	B
Q9.	B
Q10.	B
Q11.	D
Q12.	A
Q13.	C
Q14.	A
Q15.	A
Q16.	A
Q17.	B
Q18.	A
Q19.	C
Q20.	A

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 Examination: BE Semester VII

Q2	A	Answer Any Two	Marks
	II	H = 9, E = 0, T = 8, S = 5, I = 6, R = 3	05
	B	Answer Any One	
	II	Find the solution using Min-Max and Alpha Beta Pruning	10



**University of Mumbai**  
**Examination 2021 under cluster ALL (Lead College:SSJCOE )**

**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC704 and Course Name: \_Wireless Technology

Time: 2 hour

Max. Marks: 80

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<b>Q1.</b>	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	The maximum rate at which data can be transmitted over a given communication path or channel under given conditions.
Option A:	Bandwidth
Option B:	Channel Capacity
Option C:	Infrared
Option D:	FDM
2.	Method of transmitting radio signals by rapidly switching a carrier among many frequency channels using a pseudorandom sequence known to both transmitter and receiver.
Option A:	DSSS
Option B:	FHSS
Option C:	Parity Check
Option D:	CRC
3.	A communication standard that is designed to allow mobile device users to move from one network to another while maintaining a permanent IP address
Option A:	Mobile IP
Option B:	Handoff
Option C:	GPRS
Option D:	Hamming Code
4.	Temporary database which updates whenever new Mobile Station(MS) enters its area which is used to assign a TMSI ( Temporary Mobile Subscriber Identity)
Option A:	HLR
Option B:	VLR
Option C:	IMSI
Option D:	AUC
5.	What is function of OMC in GSM Architecture?
Option A:	Switching
Option B:	Registration of Users
Option C:	Maintenance and Operations
Option D:	Authentication

6.	Which multiple access is achieved by allocating different time slots for the different users.
Option A:	TDMA
Option B:	CDMA
Option C:	FDMA
Option D:	FGMA
7.	Piconets in bluetooth have a minimum of two and a maximum of _____ Bluetooth peer devices.
Option A:	Five
Option B:	Eight
Option C:	Nine
Option D:	Ten
8.	An unused part of the radio spectrum between radio bands for purpose of preventing interference
Option A:	Interference factor
Option B:	Guard Band
Option C:	Spectrum
Option D:	Demultiplexer
9.	_____ is the anticipation of unauthorized access or break to computers or data by means of wireless networks.
Option A:	Wireless access
Option B:	Wireless security
Option C:	Wired Security
Option D:	Wired device apps
10.	Which charging method is the network classified under different traffic classes and each class has different capacities and involves different charges
Option A:	Expected Capacity
Option B:	Packet
Option C:	Metered
Option D:	Paris Metro
11.	In a _____ handoff the mobile station can communicate with two base stations at the same time
Option A:	Hard
Option B:	Soft
Option C:	Medium
Option D:	Rare
12.	What is frequency reuse?
Option A:	Process of selecting and allocating channels
Option B:	Process of selection of mobile users
Option C:	Process of selecting frequency of mobile equipment
Option D:	Process of selection of number of cells
13.	Which of the following specifies a set of media access control (MAC) and physical layer specifications for implementing WLANs?

Option A:	IEEE 802.16
Option B:	IEEE 802.3
Option C:	IEEE 802.11
Option D:	IEEE 802.15
14.	Which property of OFDMA system allows adjacent subcarriers to be used without interference?
Option A:	Orthogonality
Option B:	Orthodoxy
Option C:	Octagonality
Option D:	Originality
15.	Which of the following standard committee specifies Bluetooth and other Personal Area Networks (PAN)?
Option A:	IEEE 802.11b
Option B:	IEEE 802.15
Option C:	IEEE 802.11g
Option D:	IEEE 802.16
16.	_____ carries digitally encoded user data.
Option A:	Traffic channels
Option B:	Control channels
Option C:	Signalling channels
Option D:	Forward channels
17.	In ..... transmission, the channel capacity is shared by both communicating devices at all times.
Option A:	Simplex
Option B:	Half-duplex
Option C:	Full-duplex
Option D:	Automatic
18.	Of the total channels present in the cellular system, what is the percentage of voice and control channels?
Option A:	95% voice channels, 5% control channels
Option B:	5% voice channels, 95% control channels
Option C:	50% voice channels, 50% control channels
Option D:	25% voice channels, 75% control channels
19.	LMDS is an acronym for which of the following?
Option A:	Link multipoint digital service
Option B:	Local multipoint distribution service
Option C:	Low-speed multiple data streams
Option D:	Local multimedia distribution service
20.	The signal quality of the calls is constantly monitored by the base station, when the quality of the calls drops below a certain specified level. The base request the MTSO to try and find a better cell site
Option A:	Hand-off

Option B:	Cell splitting
Option C:	Roaming
Option D:	Frequency reuse

<b>Q2</b> <b>(20 Marks)</b>	
<b>A</b>	<b>Solve any Two</b> <span style="float: right;"><b>5 marks Each</b></span>
i.	Elaborate Electromagnetic Spectrum with neat diagram.
ii.	State the differences between Hard Handoff and Soft Handoff.
iii.	Discuss role of WEP in wireless security
<b>B</b>	<b>Solve any One</b> <span style="float: right;"><b>10 marks Each</b></span>
i.	Consider a cellular network with 64 cells. Each hexagonal cell has an approximate area of 10km <sup>2</sup> . The total number of radio channels allotted for the network is 336. Find the total number of channels of the network, if i) N = 4 ii) N = 7 iii) N = 12. Where N denotes cell reuse.
ii.	Discuss applications of Zigbee. Explain the IEEE 802.15.4 topology models

<b>Q3.</b> <b>(20 Marks)</b>	
<b>A</b>	<b>Solve any Two</b> <span style="float: right;"><b>5 marks Each</b></span>
i.	Explain Frequency Hopping Spread Spectrum while also specifying any real-life application of the same.
ii.	State differences between 3G and 4G technology.
iii.	Describe MMDS with respect to WLL systems
<b>B</b>	<b>Solve any One</b> <span style="float: right;"><b>10 marks Each</b></span>
i.	Draw and explain the IEEE 802.11 WLAN Architecture
ii.	What is scatternet? Also using neat diagram explain Bluetooth connection establishment states.



**University of Mumbai**  
**Examination 2021 under cluster ALL (Lead College: \_\_\_\_\_)**

**Examinations Commencing from 1<sup>st</sup> June 2021**

**Program: INFORMATION TECHNOLOGY**

**Curriculum Scheme: Rev2012**

**Examination: BE Semester VII**

**Course Code: \_C704 and Course Name: \_Wireless Technology\_\_**

Time: 2 hour

Max. Marks: 80

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<b>Question Number</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	B
Q2.	B
Q3.	A
Q4	B
Q5	C
Q6	A
Q7	B
Q8.	B
Q9.	B
Q10.	D
Q11.	B
Q12.	A
Q13.	C
Q14.	A
Q15.	B
Q16.	A
Q17.	C
Q18.	A
Q19.	B
Q20.	C

**University of Mumbai**  
**Examination 2021 under cluster 7 (Lead College: SSJCOE)**

**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC7051 and Course Name: **Elective I: Image Processing**

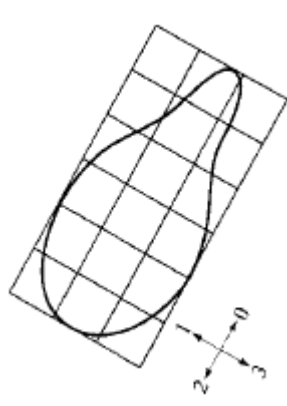
Time: 2 hour

Max. Marks: 80

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Q1.	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	Which statement is true for sampling?
Option A:	It determines the contrast of the image.
Option B:	It determines the number of grey levels in the digitized images.
Option C:	It determines the intensity values of the image.
Option D:	It determines the spatial resolution of the digitized images.
2.	For a grayscale images, the pixel value is a single number that represents the
Option A:	brightness
Option B:	frequency
Option C:	position
Option D:	origin
3.	Which filter is best suited to remove salt and pepper noise in images?
Option A:	Median filter
Option B:	Low pass filter
Option C:	High pass filter
Option D:	High boost filter
4.	Filters used for smoothing are called _____.
Option A:	Low pass filters
Option B:	Median filters
Option C:	High boost filters
Option D:	High pass filters
5.	A graph showing the number of pixels in an image at each different intensity value is called _____.
Option A:	Resolution
Option B:	Histogram

Option C:	Contrast
Option D:	Pixel connectivity
6.	2-D DFT can be separated into two 1-D DFT using _____.
Option A:	Translation property
Option B:	Separability property
Option C:	Rotation property
Option D:	Linearity property
7.	_____ components are used in Homomorphic filtering.
Option A:	illumination and reflectance
Option B:	low frequency components
Option C:	high frequency components
Option D:	value at origin
8.	Which of the following techniques of boundary descriptions have the physical interpretation of boundary shape?
Option A:	Statistical Moment
Option B:	Fourier Descriptor
Option C:	shape number
Option D:	curvature
9.	 <p>chain code for this given figure is</p>
Option A:	003010203310321032
Option B:	000030032232221211
Option C:	012302301023100321
Option D:	022332103210201330
10.	_____ is not a measure of the texture properties of the region.
Option A:	smoothness
Option B:	coarseness
Option C:	regularity
Option D:	encoding
11.	The reason for not getting perfect results after segmentation would be

Option A:	Noise and bad illumination
Option B:	Good illumination
Option C:	High contrast
Option D:	Low contrast
12.	Which of the following segmentation techniques is also known as image enhancement techniques.
Option A:	Thresholding based segmentation
Option B:	Edge- based segmentation
Option C:	Region based segmentation
Option D:	Graph Theoretic Technique
13.	_____ of the gradient component is considered for edge elements.
Option A:	Magnitude
Option B:	Region
Option C:	Slope
Option D:	Position
14.	_____ transform is not suitable for compression.
Option A:	Fourier Transform
Option B:	Cosine Transform
Option C:	Wavelet Transform
Option D:	Haar Transform
15.	_____ is not a type of redundancy.
Option A:	crypto
Option B:	coding
Option C:	inter-pixel
Option D:	psychovisual
16.	Select incorrect statements related to vector quantization.
Option A:	It divides into fixed-size blocks
Option B:	Use codebook and index for decoding
Option C:	It generate Codebook for coding
Option D:	Indexed image blocks of variable size

17.	_____ is used to expand the boundary of an object.
Option A:	Opening
Option B:	Closing
Option C:	Erosion
Option D:	Dilation
18.	Basis of the mathematical morphology is _____ .
Option A:	Matrix Theory
Option B:	Vector Theory
Option C:	Set Theory
Option D:	Array Theory
19.	_____ is a basic feature used in CBIR.
Option A:	Texture
Option B:	Color
Option C:	Shape
Option D:	Histogram processing
20.	_____ is not a suitable method for color text compression.
Option A:	RLE
Option B:	Huffman
Option C:	LZW
Option D:	Transform Coding

### Descriptive Questions

<b>Q2</b>	<b>Solve any Two Questions out of Three</b>	<b>10 marks each</b>
A	Describe in brief the following point processing image enhancement techniques. (i) Contrast stretching                      (ii) Gray Level Slicing	
B	Define region based segmentation. Describe different means to carry out region based segmentation.	
C	Perform Arithmetic coding on a 2x2 image [1, 2; 2, 3]. <b>Note:</b> The semicolon is used to end the row.	

<b>Q3</b>	<b>Solve any Two Questions out of Three</b>	<b>10 marks each</b>
A	State and prove any 2 properties of 2D Discrete Fourier Transform.	
B	Write a note on the fourier descriptor and signature.	
C	List various morphological operations and explain any two with examples.	

**University of Mumbai**  
**Examination 2021 under cluster 7 (Lead College: SSJCOE)**

**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC7051 and Course Name: **Elective I: Image Processing**

Time: 2 hour

Max. Marks: 80

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<b>Question Number</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	D
Q2.	A
Q3.	A
Q4	A
Q5	B
Q6	B
Q7	A
Q8.	A
Q9.	B
Q10.	D
Q11.	A
Q12.	A
Q13.	A
Q14.	A
Q15.	A
Q16.	D
Q17.	D
Q18.	C
Q19.	B
Q20.	A

**University of Mumbai**  
**Examination 2021 under cluster 7 (Lead College: SSJCOE)**

**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC7052 and Course Name: Software Architecture

Time: 2 hour

Max. Marks: 80

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<b>Q1.</b>	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	Which architecture style does Multi-level client server belong to?
Option A:	Object oriented style
Option B:	Mobile code style
Option C:	Blackboard style
Option D:	Layered style
2.	Which architecture style is used in signal processing?
Option A:	Pipe and Filter style
Option B:	Publish Subscribe style
Option C:	Implicit Invocation style
Option D:	Event based style
3.	What are elements that encapsulate processing and data in a system's architecture are referred to as ?
Option A:	Stakeholders
Option B:	Connectors
Option C:	Components
Option D:	Configurations
4.	What is the role of connector which controls delivery of data called?
Option A:	Communication
Option B:	Coordination
Option C:	Conversion
Option D:	Facilitation
5.	Bittorrent is an example of which well-known composite connector.
Option A:	Grid connectors
Option B:	Event-based connectors
Option C:	Peer-to-peer connectors
Option D:	Client-server connectors
6.	What is a model characteristic open to more than one interpretation called?
Option A:	Ambiguous
Option B:	Accurate



Option C:	Static
Option D:	Precise
7.	What is the viewpoint that capture how logical entities are mapped onto physical entities called?
Option A:	Physical viewpoint
Option B:	Deployment viewpoint
Option C:	Concurrency viewpoint
Option D:	Behavioral viewpoint
8.	What is the visualization in which each visualization communicates with each other visualization for updates called?
Option A:	Pull-based
Option B:	Push-based
Option C:	Peer-to-peer
Option D:	Master-slave
9.	XML visualization is an example of which type of visualization?
Option A:	Graphical visualization
Option B:	UML visualization
Option C:	Textual visualization
Option D:	Hybrid visualization
10.	Which architecture analysis goal ensures that different models do not contradict each other?
Option A:	Completeness
Option B:	Consistency
Option C:	Compatibility
Option D:	Correctness
11.	Architecture trade off and Analysis method (ATAN) belongs to which architecture technique category?
Option A:	Inspection-and Review-based
Option B:	Model-based
Option C:	Simulation-based
Option D:	Hypothesis-based
12.	Which framework does stdio used in C programming belong to?
Option A:	Pipe and Filter
Option B:	Publish Subscribe style
Option C:	C2 style
Option D:	Event based style
13.	Which Non Functional Property is a quality that reflects a software system's ability to meet its performance requirements while minimizing its usage of the resources in its computing environment?
Option A:	Efficiency
Option B:	Complexity
Option C:	Scalability
Option D:	Heterogeneity

14.	Which framework does java.io used in Java programming belong to?
Option A:	Pipe and Filter style
Option B:	C2 style
Option C:	Implicit Invocation style
Option D:	Event based style
15.	Which Non Functional Property is the capability of a software system to be adapted to meet new requirements of size and scope?
Option A:	Efficiency
Option B:	Complexity
Option C:	Scalability
Option D:	Heterogeneity
16.	Which architecture among the following is used for Space exploration?
Option A:	Decentralized architecture
Option B:	Peer to peer architecture
Option C:	Grid Protocol
Option D:	Robotics subsumption architecture
17.	Which Non Functional Property is a software system's ability to satisfy new requirements and adjust to new operating conditions during its lifetime?
Option A:	Scalability
Option B:	Adaptability
Option C:	Complexity
Option D:	Heterogeneity
18.	Which architecture among the following does Gnutella belong to?
Option A:	Decentralized architecture
Option B:	Peer to peer architecture
Option C:	Grid Protocol
Option D:	Robotics subsumption architecture
19.	Which among the following is an example of Consumer electronics?
Option A:	Game suite
Option B:	GNU Compiler suite
Option C:	Boeing 747 Family
Option D:	Sony WEGA TVs
20.	Which domain does Boeing 747 family product line belong to?
Option A:	Consumer electronics
Option B:	Compilers
Option C:	Aviation
Option D:	Video games

<b>Q2</b> <b>(20 Marks Each)</b>	
A	<b>Solve any Two</b> <b>5 marks each</b>
i.	Differentiate between software architectural erosion and architectural drift.
ii.	Explain Domain Specific Software Architecture in Detail
iii.	What is C2 type architecture?
B	<b>Solve any One</b> <b>10 marks each</b>
i.	Differentiate between perspective and descriptive architecture with example.
ii.	What are the different criteria for evaluating implementation frameworks?

<b>Q3.</b> <b>(20 Marks Each)</b>	
A	<b>Solve any Two</b> <b>5 marks each</b>
i.	Define product line architecture
ii.	What do you mean by stakeholder driven modeling
iii.	Explain how middleware and component framework induces architectural styles
B	<b>Solve any One</b> <b>10 marks each</b>
i.	Explain with example software system mobility and architecture
ii.	Explain the Design issues for non-functional properties a) Efficiency and complexity. b) Scalability and heterogeneity

**University of Mumbai**  
**Examination 2021 under cluster 7 (Lead College: SSJCOE)**

**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC7052 and Course Name: Software Architecture

Time: 2 hour

Max. Marks: 80

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<b>Question Number</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	D
Q2.	A
Q3.	C
Q4	B
Q5	C
Q6	A
Q7	B
Q8.	C
Q9.	C
Q10.	B
Q11.	A
Q12.	A
Q13.	A
Q14.	B
Q15.	C
Q16.	D
Q17.	B
Q18.	B
Q19.	D
Q20.	C

**University of Mumbai**  
**Examination 2021 under cluster 7 (Lead College: SSJCOE)**

**Examinations Commencing from 15th June 2021**

Program: **Information Technology**

Curriculum Scheme: Rev2012

Examination: BE Semester VII

Course Code: ITC7053 and Course Name: Elective I: E-Commerce & E- Business

Time: 2 hour

Max. Marks: 80

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<b>Q1.</b>	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	E-commerce is defined as?
Option A:	Doing business electronically
Option B:	Buying products
Option C:	Selling products
Option D:	Doing business
2.	The phases in JSP life cycle are ?
Option A:	Initialization, Cleanup, Compilation, Execution
Option B:	Compilation, Initialization, Execution, Cleanup
Option C:	Cleanup, Compilation, Initialization, Execution
Option D:	Initialization, Compilation, Cleanup, Execution
3.	Which one of the following can prevent double spending in e-payment?
Option A:	Complex decryption algorithms
Option B:	Simple cryptographic algorithms
Option C:	Complex cryptographic algorithms
Option D:	Complex coding algorithms
4.	Visa and MasterCard are examples of?
Option A:	Simple system
Option B:	Open and Close loop system
Option C:	Open loop system
Option D:	Close loop system
5.	The concept considers different types of tasks that are involved with adding value and looks at how the efficiency of these tasks can be improved, this concept is known as?
Option A:	Value chain
Option B:	Upstream supply chain
Option C:	downstream supply chain
Option D:	Value stream
6.	In Advertising supported model "General Interest Strategy" is described as?
Option A:	Advertisers pay low rates to reach large numbers of undifferentiated visitors
Option B:	Advertisers pay high rates to reach small numbers of visitors with specific interests related to the theme of the site

Option C:	Advertisers pay high rates for ads on specific pages that appeal to visitors with specific interests related to those pages or sections of the site
Option D:	Advertisers pay low rates to reach specific type of visitors
7.	E-commerce is about buying and selling of goods around the web, whereas e-business is?
Option A:	E-business is also all about buying and selling products online.
Option B:	E-business is also about buying and selling products online, but not limited to.
Option C:	E-business is subset of e-commerce.
Option D:	E-business is equivalent to e-commerce.
8.	In order to make automatic procurement process in e-business following thing is required?
Option A:	RFID
Option B:	VLSI
Option C:	Electronic procurement system
Option D:	Website
9.	Which is the following shows relationship between these ecommerce and E-business?
Option A:	E-business is a subset of E-commerce.
Option B:	E-commerce is broadly equivalent to E-business.
Option C:	E-commerce is a subset of E-business.
Option D:	E-commerce has some overlap with E-business.
10.	For an e Commerce website which of the following cannot be utilized as a CRM?
Option A:	Drupal
Option B:	Zoho
Option C:	Pipedrive
Option D:	Freshsales
11.	Sell-side e commerce is an interaction between.
Option A:	Organization and stakeholders
Option B:	Organization and customers
Option C:	Organization and suppliers
Option D:	Organization and organization
12.	Which of the following is not the session tracking techniques for building e-commerce applications?
Option A:	Hidden form fields
Option B:	Cookies
Option C:	URL Rewriting
Option D:	Using response object
13.	Agile Wallet is developed by?
Option A:	Developed by Cyber
Option B:	Developed by Cybersecurity
Option C:	Developed by Cybertech
Option D:	Developed by cybercash

14.	The free payment clearing service that PayPal provides to customer uses? Payment model-
Option A:	P2P
Option B:	P2B
Option C:	C2B
Option D:	C2C
15.	With respect to E-business which of the following is true?
Option A:	Procurement purchases from intermediate
Option B:	Procurement purchases from supplier
Option C:	Procurement purchases from another organization
Option D:	Procurement purchase from supplier intermediate or another organization
16.	If a company wants to host its E-commerce website then which of the following is not true?
Option A:	Shared hosting is cheaper than the dedicated hosting
Option B:	Shared hosting is safer than the dedicated hosting
Option C:	Dedicated hosting is safer than the shared hosting
Option D:	Dedicated hosting is costlier than shared hosting
17.	An E-business objective should be SMART, within this acronym meaning of R is?
Option A:	Representative
Option B:	Responsible
Option C:	Reliable
Option D:	Relevant
18.	If an E-Commerce company wants to increase their sale in India then what should be avoided?
Option A:	Cash on delivery option
Option B:	Use the hardware technology from Shanghai
Option C:	Creating product for elders
Option D:	Creating product for teenagers
19.	If a company wants to launch its E-commerce website on the internet they should not contact?
Option A:	Hostgator
Option B:	Blue Host
Option C:	WPX Hosting
Option D:	FACEBOOK
20.	With respect to ecommerce website design which of the following is more correct?
Option A:	Just like the look and feel of the website interface is also important
Option B:	Responsiveness of the website is important
Option C:	Look feel and the responsive interface of the website is important
Option D:	Interface is not that much than look and feel of the website

<b>Q2.</b> <b>(20 Marks)</b>	<b>Solve any Two Questions</b> <span style="float: right;"><b>(10 marks each)</b></span>
A	With neat diagram, explain the working of SET protocol used in card payment system.
B	Differentiate between traditional commerce and electronic commerce, by elaborating on the following eight points. (1) How the commerce takes place (2) Payment options (3) Any two benefits (4) Any two shortcomings (5) Risks involved (6) Security measures (7) Example application where it cannot be used (8) Example application where it is well suited
C	Discuss various categories of e-commerce payment methods along with example of each.

<b>Q3.</b> <b>(20 Marks)</b>	<b>Solve any Two Questions.</b> <span style="float: right;"><b>(10 marks each)</b></span>
A	Discuss the CRM strategy adopted by any company to acquire, convert, retain, growth of the customer worldwide/ nationwide.
B	What are 7 P's of e-marketing? Also, discuss at least 5 ethical issues that can affect e marketing.
C	What are the different revenue models in ecommerce? Also, explain the SLEPT framework in e-commerce.



**University of Mumbai**  
**Examination June 2021**

**Examinations Commencing from 1<sup>st</sup> June 2021**

Program: Information Technology

Curriculum Scheme: Rev 2012

Examination: BE Semester VII

Course Code: ITC7053 and Course Name: Elective I: E-Commerce & E- Business

Time: 2 hour

Max. Marks: 80

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<b>Question Number</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	A
Q2.	B
Q3.	C
Q4	D
Q5	D
Q6	A
Q7	B
Q8.	C
Q9.	C
Q10.	A
Q11.	B
Q12.	D
Q13.	D
Q14.	A
Q15.	D
Q16.	B
Q17.	D
Q18.	B
Q19.	D
Q20.	C

**University of Mumbai**

**Examination 2021 under cluster 4 (Lead College: Pillai College of Engineering )**

Examinations Commencing from 15th June 2021 to 1st July 2021.

Program: B.E. Information Technology

Curriculum Scheme: Rev 2012

Examination: BE Semester: VII

Course Code: ITC7054 and Course Name: Multimedia Systems

Time: 2 hour

Max. Marks: 80

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Q1.	<b>Choose the correct option for following questions. All the Questions are compulsory and carry equal marks</b>
1.	Which program has pre-programmed elements for the development of interactive multimedia elements.
<b>Option A:</b>	<b>Authoring System</b>
Option B:	Interactive Audio
Option C:	Interactive Video
Option D:	Hypermedia documents
2.	MIDI files may makes different sound when played back through different sound synthesizers and sound cards. What is the solution to overcome this problem
Option A:	General MPEG should be used.
<b>Option B:</b>	<b>General MIDI should be used.</b>
Option C:	Standardization in sound cards
Option D:	Standardization in synthesizers.
3.	Which file format provides animation.
Option A:	TIFF
Option B:	JPEG
Option C:	BMP
<b>Option D:</b>	<b>GIF</b>
4.	Following is not the standard for Analog video
Option A:	National Television System Committee
Option B:	Phase Alternate Line
Option C:	Sequential Color with Memory
<b>Option D:</b>	<b>Audio Video Interleave</b>
5.	----- file format allows us to represent virtual world via internet and with world wide web hyper linking.
Option A:	Virtual Reality Animation
Option B:	Virtual Reality Movie Maker
Option C:	Virtual Reality Encoder
<b>Option D:</b>	<b>Virtual Reality Modeling Language</b>

6.	Which components contain significant visual information.
<b>Option A:</b>	<b>Luminance</b>
Option B:	Chrominance
Option C:	Hue
Option D:	Saturation
7.	Following is not the standard format for Digital audio.
Option A:	MPEG audio layer 3 file format
<b>Option B:</b>	<b>Windows Media Viewer</b>
Option C:	Waveform Audio File
Option D:	Free Lossless Audio Codec
8.	Lossy compression indicates presence of
<b>Option A:</b>	<b>Quantization</b>
Option B:	Sampling
Option C:	Entropy
Option D:	Correlation
9.	In JPEG 2000, which transformation is used to convert data from spatial domain to frequency domain.
Option A:	Sine Transform
<b>Option B:</b>	<b>Discrete Cosine Transform</b>
Option C:	Wavelet Transform
Option D:	Walsh Transform
10.	Which techniques are used to capture temporal aspect of video?
<b>Option A:</b>	<b>Motion estimation &amp; compensation</b>
Option B:	Thresholding
Option C:	Comparing
Option D:	Compression
11.	This standard is handling Multimedia Content Description Interface
Option A:	MPEG-21
<b>Option B:</b>	<b>MPEG-7</b>
Option C:	MPEG-2
Option D:	MPEG-1
12.	Theoretical foundations for lossy data compression is given by
Option A:	Trigonometry
Option B:	Economics
Option C:	Financial Analysis
<b>Option D:</b>	<b>Rate Distortion Theory</b>
13.	-----method of sending Internet Protocol (IP) datagrams to a group of interested receivers in a single transmission.
Option A:	IEEE multicast
Option B:	TCP multicast
<b>Option C:</b>	<b>IP multicast</b>

Option D:	UDP multicast
14.	ATM supports which types of video bit rates
Option A:	Constant Bit Rate (CBR)
Option B:	Variable Bit Rate (VBR)
Option C:	Available Bit Rate (ABR)
<b>Option D:</b>	<b>All of the above</b>
15.	Aim of this organization is to make strong communication framework which will connect all telecommunications and computer networks worldwide.
<b>Option A:</b>	<b>Global Information Infrastructure</b>
Option B:	Universal Multimedia Access
Option C:	Digital Multimedia broadcasting
Option D:	Wide Area Network
16.	ATM can be used for
Option A:	Wide area network
Option B:	Local area network
<b>Option C:</b>	<b>Networks covering any range</b>
Option D:	Campus area network
17.	Which technology converts Internet signal into radio waves.
Option A:	Ethernet
<b>Option B:</b>	<b>Wi-Fi</b>
Option C:	TCP and UDP protocol
Option D:	IP protocol
18.	Who is creating and publishing Internet Standards
Option A:	ISO
Option B:	IEEE
<b>Option C:</b>	<b>IETF</b>
Option D:	CSI
19.	----- is a framework for Multimedia Standardization
Option A:	IETE
<b>Option B:</b>	<b>MEDIACOM 2004</b>
Option C:	ACCESS
Option D:	MOSYN
20.	-----audio/video refers to on-demand requests for compressed audio/video files.
Option A:	Streaming live.
Option B:	Interactive
<b>Option C:</b>	<b>Streaming stored</b>
Option D:	Real-time streaming

Subjective:

Q2.	Solve any Four out of Six. (5 marks each)
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A	Explain different types of Authoring System
B	Explain TIFF file structure.
C	Explain type of video signals: 1) Composite video 2) Component video 3) S-Video.
D	What is the role of Quantization in lossy compression.
E	Explain JPEG compression with block diagram.
F	Explain ADPCM in speech coding.

Q3.	Solve any Four out of Six. (5 marks each)
A	Explain different motion vector search technique.
B	Explain in detail Video on demand (VoD) concept.
C	What is mean by Standardization. How it is achieved for Multimedia Communication
D	Explain Multimedia over ATM Network
E	Explain Global Information Infrastructure (GII)
F	Explain in detail Universal Multimedia Access (UMA)

**University of Mumbai**

**Examination 2020 under cluster 04(Lead College:Pillai College of Engineering)**

**Examinations Commencing from 15th June 2021 to 1st July 2021.**

Program: B.E. Information Technology

Curriculum Scheme: Rev 2012

Examination: BE Semester: VII

Course Code: ITC7054 and Course Name: Multimedia Systems

Time: 2 hour

Max. Marks: 80

**Q1. Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**

Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	B
Q3.	D
Q4.	D
Q5.	D
Q6.	A
Q7.	B
Q8.	A
Q9.	B

Q10.	A
Q11.	B
Q12.	D
Q13.	C
Q14.	D
Q15.	A
Q16.	C
Q17.	B
Q18.	C
Q19.	B
Q20.	C

**Q2. Whichever option(1/2/3) you Select for subjective/descriptive questions(total-20 Marks)**

**Model Answer: (with marks distribution)**

Q2.	Solve any Four out of Six. (5 marks each)
A	Explain different types of Authoring System
Ans	<ol style="list-style-type: none"><li>1. Dedicated Authoring System</li><li>2. Timeline-based Authoring</li><li>3. Structured Multimedia Authoring</li><li>4. Programmable Authoring System</li><li>5. Multisource Multi-user Authoring Systems</li></ol>

	6. Telephone Authoring Systems Explanation of two to three lines expected on each type of authoring system.
B	Explain TIFF file structure.
Ans	TIFF Structure: File Organization: TIFF files are organized into three sections. 1. Image File Header (IFH) 2. Image File Directory (IFD) 3. Bitmapped Data (Images) Explanation on each point is expected of 4 to 5 lines.
C	Explain type of video signals: 1) Composite video 2) Component video 3) S-Video.
Ans	Basic structure, use, advantages and disadvantages.
D	What is the role of Quantization in lossy compression.
Ans	Definition of Quantization, Formula, Its significance, Reason for Lossy expected.
E	Explain JPEG compression with block diagram.
Ans	Block diagram of JPEG and explanation of each sub block is expected. Sub block are: Image Preparation Block, Forward DCT Transform, Quantization , DC coefficient, Run-length Coding (RLC) on AC coefficients, Zig-zag scan, DPCM on DC coefficients, Entropy Coding, Huffman coding, Arithmetic Coding
F	Explain ADPCM in speech coding.
Ans	Basic concept, block diagram of Encoder and Decoder, Role of Quantizer, Its applications expected.

**Q3. Whichever option(1/2/3) you Select for subjective/descriptive questions (total-20 Marks)**

**Model Answer: (with marks distribution)**

Q3.	Solve any Four out of Six. (5 marks each)
A	Explain different motion vector search technique.
Ans	1) Sequential Search 2) 2D Logarithmic Search 3) Hierarchical search. Explanation of each type with example.
B	Explain in detail Video on demand (VoD) concept.
Ans	Concept of Video on Demand (VoD), underlying network, basic requirements and applications are expected.
C	What is mean by Standardization. How it is achieved for Multimedia Communication

Ans	Need and advantages of standardization. Various types standard compression names for text, audio, video and image is expected. Also various standard protocol which are used for multimedia communication are expected.
D	Explain Multimedia over ATM Network
Ans	ATM concept, Why beneficial for multimedia, types of bit rate, applications that are suitable on ATM is expected.
E	Explain Global Information Infrastructure (GII)
Ans	What is GII, need, functionality or their projects provided by GII is expected.
F	Explain in detail Universal Multimedia Access (UMA)
Ans	Concept of UMA, requirement and approaches, advantages of UMA is expected.



Program: BE Information Technology  
Curriculum Scheme: Rev2012  
Examination: Final Year Semester VII  
Course Code: ITC7055 and Course Name: Usability Engineering

Time: 1 hour

Max. Marks:

Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	_____ means “The system is good enough to satisfy the need and all requirements of the users and other potential stakeholders, such as user’s clients and managers”.
Option A:	<b>System Acceptability</b>
Option B:	Learnability
Option C:	Efficiency
Option D:	Memorability
Q2.	“Having fewer options will often mean better usability because the users can then concentrate on understanding those fewer options”. Select correct usability slogan related to the above statement.
Option A:	Your Best Guess Is Not Good Enough
Option B:	The User Is Always Right
Option C:	User Are Not Designers
Option D:	<b>Less Is More</b>
Q3.	___ is a usability attribute that refers to how easy a system is to learn so that the user can rapidly start getting some work done with the system.
Option A:	Memorability
Option B:	<b>Learnability</b>
Option C:	Error
Option D:	Efficiency
Q4.	_____ is a relatively new approach to designing products. It successfully involves the stakeholders, designers, researchers, and end-users in the design

	process to help ensure that the end product meets the needs of its intended user base.
Option A:	Serial design
Option B:	parallel design
Option C:	<b>Participatory design</b>
Option D:	Complete Design
Q5.	_____ interfaces include higher dimensionality with more media types and that they will be highly portable and personal and noncommand user interfaces.
Option A:	Line oriented
Option B:	Full-Screen
Option C:	Graphical
Option D:	<b>Next generation</b>
Q6.	Cutting down on the number of features is called _____. Since the result is a narrow system that does include in depth functionality, but only for a few selected features.
Option A:	<b>Vertical prototyping</b>
Option B:	Complex prototyping
Option C:	Simple prototyping
Option D:	Horizontal prototyping
Q7.	As a part of user-centered design the terminology in user interface should be based on the users' language and not on system oriented terms. As far as possible, dialogues should be in the users' native language and not in a foreign language. The usability Heuristic related with the above statements is _____
Option A:	Help and Documentation
Option B:	Minimize User Memory Load
Option C:	<b>Speak the users' Language</b>
Option D:	Consistency, Feedback

Q8.	The good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action. The usability Heuristic related to it is _____
Option A:	Recognition rather than recall
Option B:	Flexibility and efficiency of use
Option C:	Aesthetics and minimalist design
Option D:	<b>Error prevention</b>
Q9.	A method that does not require human participants serving as test users is the
Option A:	Usability test.
Option B:	Pluralistic walkthrough.
Option C:	Rubin's comparison test.
Option D:	<b>Heuristic evaluation.</b>
Q10.	If the test plan calls for a _____ approach with very few test users, one should not choose users from outlier groups but should take additional care to involve average users.
Option A:	uncharged usability
Option B:	pivot usability
Option C:	in-charged usability
Option D:	<b>discount usability</b>
Q11.	Questionnaires and _____ are also useful methods for studying how users use systems and what features they particularly like or dislike.
Option A:	Heuristic evaluation
Option B:	Face reading
Option C:	<b>Interviews</b>
Option D:	Wizard of OZ

Q12.	_____ is a question of whether the usability test in fact measures something of relevance to usability of real products in real use outside the laboratory.
Option A:	<b>Validity</b>
Option B:	Reliability
Option C:	Visualization
Option D:	Availability
Q13.	Which is not a type of usability standard _____
Option A:	National and international standards
Option B:	Industry standards
Option C:	In-house standards
Option D:	<b>IEEE standards</b>
Q14.	The most famous analytic method is known as GOMS stands for _____
Option A:	good, operators, methods, and selection rules
Option B:	Goals of methods, and selection rules
Option C:	goals, operators, module, and selection rules
Option D:	<b>goals, operators, methods, and selection rules</b>
Q15.	The specification of window and dialog box layouts for graphical user interfaces can be stored in _____.
Option A:	user databases
Option B:	admin databases
Option C:	<b>resource databases</b>
Option D:	service databases

**Q.2 a)** Explain Usability Testing.

Or

**Q.2 b)** Write short note on

i) User Feedback

ii) Iterative Design

**Q.3 a)** Design website for online payment of college fee, Explain which usability concepts are required to consider while designing and testing of website.

Or

**Q.3 b)** Explain following Usability Heuristics with example.

i) Simple and Natural Dialogue

ii) Speak the users' Language

Program: BE Information Technology

Curriculum Scheme: Rev2012

Examination: Final Year Semester VII

Course Code: ITC 7055 and Course Name: Usability Engineering

Time: 1 hour

Max. Marks:

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<b>Question</b>	<b>Correct Option (Enter either 'A' or 'B' or 'C' or 'D')</b>
Q1.	A
Q2.	D
Q3.	B
Q4	C
Q5	D
Q6	A
Q7	C
Q8.	D
Q9.	D
Q10.	D
Q11.	C
Q12.	A
Q13.	D
Q14.	D
Q15.	C